Creating Community Based Solutions

What's the issue?

Whether we realize it or not, most of us in Wisconsin interact with groundwater on a daily basis. Around 70% of Wisconsinites rely on groundwater for drinking water and over 97% of agricultural irrigation water in the state is drawn from below ground (Maupin et al., 2014). While communities across the state are united in this dependence on groundwater, hydrogeologic settings and pressures on groundwater resources are unique to each locality. As Groundwater Coordinating Council (GCC) agencies advance groundwater science and exchange information with one another, an equally large emphasis is placed on communicating this information to the public and empowering local communities to design groundwater solutions that make sense for them.

GCC in Action: *Comprehensive Planning*

By Wisconsin law, as of 2010 all cities, villages, towns and counties that adopt or amend zoning, land division or official mapping ordinances must do so consistent with a comprehensive plan. Communities that rely on groundwater as their sole source of water need to assess the magnitude and limits of their water source, but many need additional expertise to quantify and plan for their water supply. The Wisconsin Groundwater Research and Monitoring Program has funded several projects to help communities locate, evaluate, and incorporate good groundwater information and data in their plans.

For example, researchers partnered with Richfield, WI to determine what kinds of groundwater supply information are most relevant and usable for planning from a community's perspective (Cherkauer, 2005). They determined that good basic understanding of geology, sources, sinks and water balance of its aquifer system is needed so that residents and community leaders know where their water comes from. Interaction with users at all levels is also crucial to developing the awareness needed to create long-term plans and supporting laws to ensure a sustainable water supply under foreseeable future conditions.

A related project evaluated whether and how Wisconsin communities address groundwater in their comprehensive plans and what tools would help them do so (Markham et al., 2005). This led to the creation of a statewide website with relevant groundwater information for use in comprehensive planning and a suggested process for integrating this information in plans (Markham and Dunning, 2007). All of Wisconsin's 72 counties have a dedicated page that includes a snapshot of local data about groundwater susceptibility, sources of drinking water, groundwater quality, potential sources of contaminants, groundwater quantity, and money spent on cleanup and groundwater protection strategies. Long term hosting and maintenance of the site is undetermined, but the emphasis on getting groundwater information into the hands of local decision makers in ways that are most useful to them remains an important focus of GCC work.

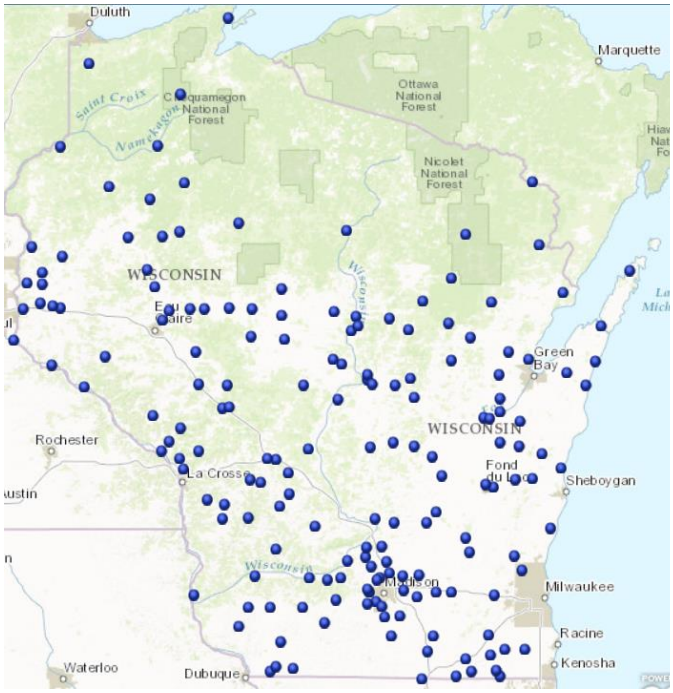
Other Projects in Other Places

Environmental Public Health Tracking

Environmental health data, including information on groundwater and drinking water supplies, is not always easy for local leaders to access and interpret. To assist with this, the Department of Health's Environmental Public Health Tracking program pulls data from several sources and combines them into one public portal. Community leaders and residents can explore environmental health issues such as air quality, water quality, asthma, cancer, and childhood lead poisoning via tables, charts, and maps designed specifically for their county.

In fall 2015, the Wisconsin Tracking team announced a new mini-grant program, *Taking Action with Data.* Five Wisconsin counties used data from their County Environmental Health Profile to propose projects addressing drinking water-related environmental public health issues in their communities. Staff from the Wisconsin Environmental Public Health Tracking program provided technical assistance on epidemiology, communications, evaluation, etc. Using these funds, these five counties have been able to achieve tangible results, such as increased private well testing or the creation of tools that can be used to better understand groundwater quality within the county. After the success of the first year, a second round of funding was announced in July 2016. Additional information about these projects can be found on the Wisconsin Tracking website.

Source Water Protection



Communities with protective plans for all wells that supply public drinking water as of August 2015. *Figure: DNR*

The DNR, in partnership with Wisconsin Rural Water Association (WRWA), Wisconsin Land and Water Associations, Wisconsin Geologic and Natural History Survey, USGS and several UW departments, is making what they call "strategic interventions" to support community based solutions. As examples, the City of Waupaca and the Villages of Spring Green and Fall Creek are receiving technical and financial support to try innovative methods of working with neighboring landowners to tackle rising nitrate in public supply wells. In a different corner of the state, the Village of Luck recently updated its wellhead protection plan with assistance from WRWA and is considering a range of management possibilities that DNR groundwater programs are available to support. Luck is on a short list of communities with susceptible wells and active interest in water supply protection that DNR and partners are working with in order to provide

new examples of local innovation for others to emulate. These examples and additional resources are available on the DNR's recently revamped Source Water Protection webpage, which seeks to link communities with information they need to develop source water protection plans, as well as recognize communities that already have plans and ordinances in place.

References

Cherkauer, D.S. 2005. Providing communities with the ground water information needed for comprehensive planning. Wisconsin groundwater management practice monitoring project, WR03R007. Available at http://www.wri.wisc.edu/Downloads/PartnerProjects/FinalReports/Final_WR03R007.pdf

Markham, L., C.C. Tang, B. Webster, C. Denning. 2005. Development of tools to address groundwater in comprehensive planning. Wisconsin groundwater management practice monitoring project, WR03R007. Available at http://www.wri.wisc.edu/Downloads/PartnerProjects/FinalReports/Final_WR04R005.pdf

Markham, L. and C. Dunning. 2007. Centralizing access to groundwater information for use in comprehensive planning. Wisconsin groundwater management practice monitoring project, DNR-190. Available at http://digital.library.wisc.edu/1711.dl/EcoNatRes.MarkhamComp

Maupin, M. A., J. F. Kenny, S. S. Hutso, J. K. Lovelace, N. L. Barber, and K. S. Linsey. 2014. Estimated use of water in the United States in 2010: U.S. Geological Survey Circular 1405, 56 p., http://dx.doi.org/10.3133/cir1405.